

AMENDMENTS TO THE CLAIMS

Amended claims follow:

1. (Currently Amended) A multicast packet duplication system for multicast packets containing at least multicast address data, comprising:
an input port configured to receive a packet; and
a plurality of output ports configured to output the packet, wherein:
a number of duplications of the packet for each of the plurality of output ports is controlled by descriptors arranged in a linked-list table indexed by a hashing function applied to said multicast address data;
wherein an encoding format of the descriptors includes at least one of:
a contiguous range encoding that includes a starting indicator and an ending indicator; or
a non-contiguous range encoding that includes a most significant bit (MSB) portion of an indicator and a bitmap decoded from a least significant bit (LSB) portion of the indicator;
and
a discrete encoding that includes a first indicator and a second indicator.
2. (Original) The packet duplication system of claim 1, wherein:
each of the number of duplications is coupled to a Virtual Local Area Network (VLAN).
3. (Cancelled)
4. (Original) The packet duplication system of claim 1, wherein:
the descriptors arranged in the linked-list table include at least one shared descriptor.
5. (Original) The packet duplication system of claim 1, further comprising:
a pointer table having a width comprising a plurality of entries coupled to the linked-list table.
6. (Original) The packet duplication system of claim 5, wherein:

each of the plurality of entries corresponds to one of the plurality of output ports.

7. (Currently Amended) The packet duplication system of claim [[3]]1, wherein:
the contiguous range encoding includes a starting Virtual Local Area Network (VLAN)
indicator and an ending VLAN indicator.

8. (Currently Amended) The packet duplication system of claim [[3]]1, wherein:
the non-contiguous range encoding includes a most significant bit (MSB) portion of a
Virtual Local Area Network (VLAN) indicator and a bitmap decoded from a least
significant bit (LSB) portion of the VLAN indicator.

9. (Currently Amended) The packet duplication system of claim [[3]]1, wherein:
the discrete encoding includes a first Virtual Local Area Network (VLAN) indicator and
a second VLAN indicator.

10. (Currently Amended) The packet duplication system of claim [[3]]1, wherein:
the encoding format is configured to be selected in response to control bits.

11. (Currently Amended) A method of controlling a duplication of a multicast packet
containing at least multicast address data, comprising:
receiving the packet;
performing a hashing function on said multicast address data;
using the results of said hashing function as an index for a linked-list table;
said linked-list table including a plurality of pointers;
accessing a first multicast descriptor pointer in said linked-list table;
said multicast descriptor pointer pointing to multicast descriptors comprised of at least
multicast Virtual Local Area Network (VLAN) pointers;
using at least one of said multicast VLAN pointers to access a multicast VLAN table
comprised of second pointers to VLAN pointer descriptors;
accessing a VLAN pointer descriptor in response to the second pointer; and using
information contained in said VLAN pointer descriptor to control

applying an encoding for the duplication of the packet;

wherein applying the encoding includes selecting a format of descriptors, the format including at least one of:

a contiguous range encoding that includes a starting indicator and an ending indicator; or
a non-contiguous range encoding that includes a most significant bit (MSB) portion of an
indicator and a bitmap decoded from a least significant bit (LSB) portion of the indicator;
and

a discrete encoding that includes a first indicator and a second indicator.

12. (Canceled)

13. (Cancelled)

14. (Original) The method of controlling the duplication of the packet of claim 11,
wherein:
each of a number of duplications is coupled to a Virtual Local Area Network (VLAN).

15. (Currently Amended) The method of controlling the duplication of the packet of
claim 11, wherein:
the VLAN pointer descriptor includes a shared descriptor.

16. (Currently Amended) The method of controlling the duplication of the packet of
claim ~~[[13]]~~11, wherein:
the contiguous range encoding includes a starting Virtual Local Area Network (VLAN)
indicator and an ending VLAN indicator.

17. (Currently Amended) The method of controlling the duplication of the packet of
claim ~~[[13]]~~11, wherein:
the non-contiguous range encoding includes a most significant bit (MSB) portion of a
Virtual Local Area Network (VLAN) indicator and a bitmap decoded from a least
significant bit (LSB) portion of the VLAN indicator.

18. (Currently Amended) The method of controlling the duplication of the packet of claim [[13]]11, wherein:
the discrete encoding includes a first Virtual Local Area Network (VLAN) indicator and a second VLAN indicator.

19. (Currently Amended) The method of controlling the duplication of the packet of claim [[13]]11, wherein:
the selecting the format of descriptors includes configuring in response to control bits.

20. (Canceled)

21. (Currently Amended) A multicast packet duplication system for multicast packets containing at least multicast address data, comprising:
an input port configured to receive a packet; and
a plurality of output ports configured to output the packet; said output ports being coupled to one or more Virtual Local Area Networks (VLAN);
wherein said system applies a hashing function to the multicast address data of said multicast packets;
and wherein said system uses said hashing function as an index to a linked-list table; said linked-list table having entries that comprise at least either multicast descriptors or pointers to multicast descriptors;
said multicast descriptors being comprised of at least multicast VLAN descriptors or pointers to multicast VLAN descriptors;
wherein [[the]]a number of distributions of said multicast packet and [[the]]an output port distribution of said multicast packet is controlled by information stored in either the multicast descriptors or multicast VLAN descriptors;
wherein said multicast VLAN descriptors include at least one of:
a contiguous range encoding that includes a starting VLAN indicator and an ending VLAN indicator;

a non-contiguous range encoding that includes a most significant bit (MSB) portion of a VLAN indicator and a bitmap decoded from a least significant bit (LSB) portion of the VLAN indicator; and
a discrete encoding that includes a first VLAN indicator and a second VLAN indicator.

22. (Cancelled)

23. (Previously Presented) The packet duplication system of claim 21, wherein said multicast descriptors also include a multicast packet time to live field.

24. (Previously Presented) The packet duplication system of claim 21, wherein said multicast Virtual Local Area Network (VLAN) descriptors contain a plurality of entries each describing the multicast packet distribution to a different VLAN.

25. (Currently Amended) A multicast packet duplication system for multicast packets containing at least multicast address data, comprising:
an input port configured to receive a packet; and
a plurality of output ports configured to output the packet; said output ports being coupled to one or more Virtual Local Area Networks (VLAN);
wherein said system applies a hashing function to the multicast address data of said multicast packets;
and wherein said system uses the result of said hashing function as an index to a linked-list table;
said linked-list table having entries that comprise either multicast descriptors or pointers to multicast descriptors;
said multicast descriptors being comprised of at least multicast VLAN descriptors or pointers to multicast VLAN descriptors;
wherein [[the]]a number of distributions of said multicast packet and [[the]]an output port distribution of said multicast packet is controlled by information stored in either the multicast descriptors or multicast VLAN descriptors;
wherein said multicast VLAN descriptors contain a plurality of entries each describing

the multicast packet distribution to a different VLAN; and
wherein said VLAN descriptors include at least one of:
a contiguous range encoding that includes a starting VLAN indicator and an ending VLAN indicator; [[or]]
a non-contiguous range encoding that includes a most significant bit (MSB) portion of a VLAN indicator and a bitmap decoded from a least significant bit (LSB) portion of the VLAN indicator; [[or]]and
a discrete encoding that includes a first VLAN indicator and a second VLAN indicator.

26. (Currently Amended) A method of controlling a duplication of one or more multicast packets containing at least multicast address data, comprising:

receiving the multicast packets;
applying a hashing function to the multicast address data of said multicast packets;
using the result of the hashing function as an index to a linked-list table;
retrieving a multicast descriptor from said linked-list table;
using said multicast descriptor to find the multicast packet time to live data and a Virtual Local Area Network (VLAN) descriptor;
obtaining information regarding how said multicast packets should be distributed to various output ports to at least one VLAN from said VLAN descriptor;
and using this distribution information to distribute said multicast packets to said at least one VLAN;

wherein said VLAN descriptor includes at least one of:

a contiguous range encoding that includes a starting VLAN indicator and an ending VLAN indicator;

a non-contiguous range encoding that includes a most significant bit (MSB) portion of a VLAN indicator and a bitmap decoded from a least significant bit (LSB) portion of the VLAN indicator; and

a discrete encoding that includes a first VLAN indicator and a second VLAN indicator.